Kansas Medical Assistance Program
Drug Utilization Review Bulletin

Metered Dose Inhalers: The Change From CFC to HFA

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The metered dose inhaler (MDI) is the most widely used device for respiratory medication delivery around the world. The first MDI was introduced in mid-1900. By the year 2000, the number of MDIs produced reached 800 million world-wide. Over the past few years, the MDIs have undergone mandatory removal of chlorofluorocarbons (CFCs) to allow for a more environmentally-safe product.

Chlorofluorocarbons (CFCs) are substances containing carbon, chlorine and fluorine. In the 1930s CFCs were used to replace hazardous materials used in the refrigeration market. By 1956, the use of CFCs moved into the pharmaceutical realm as the propellant for aerosolized β2-agonist devices for patients with asthma and COPD.

In 1971, large accumulations of CFCs were found in the atmosphere, where they subsequently dissolved, releasing free chlorine and deterioration of ozone. The result has lead to reduced protection from ultraviolet B radiation, and increased risk of sunburns, skin cancers, photokeratitis, cataracts, and immune suppression. Therefore, an alternate propellant containing hydrofluorocarbons , primarily tetrafluoroethane (HFA-134a), was identified for use in MDIs.

The Food and Drug Administration has mandated all MDIs be CFC-free by December 31, 2008. Many of the manufacturers have already replaced the CFCs with HFCs in their MDIs. Currently, there are seven HFA containing MDIs available to the U.S. market. These include; Atrovent HFA®, Flovent HFA®, ProAir HFA®, Proventil HFA®, QVAR®, Ventolin HFA®, and Xopenex HFA®.

Patient Education: HFA vs. CFC inhalers

Similarities

- HFA inhalers are just as safe and effective.
- HFA are similar in shape and size.

Differences

- HFA inhalers are better for the environment.
- HFA inhalers may taste, feel, and smell different.
- HFA inhalers may need to be cleaned more frequently to prevent clogging.
- HFA inhalers may not need to be primed as often.
- HFA inhalers should not be immersed in water to determine if canister is empty.

Kansas Medical Assistance Program supports the use of HFA inhalers. Six out of the seven HFA inhalers are preferred medications on the Preferred Drug List (PDL).

The KMAP Preferred Drug List

Unless otherwise indicated, the chemical name includes branded products

Asthma Medications

Inhaled Corticosteroids			
Preferred Drug Covered		**Non-preferred Prior Authorization Required**	
Beclomethasone	QVAR®	Flunisolide/Menthol	AeroBid M®
Budesonide Inhaled Susp	Pulmicort Respules® * 6 and under ONLY	Budesonide Inhaled Susp	Pulmicort Respules® * 7 and over
Budesonide Inhaled Powder	Pulmicort Turbuhaler®	Flunisolide	Aerobid®
Fluticasone	Flovent HFA® Flovent Diskus®		
Mometasone	Asmanex®		
Triamcinolone	Azmacort®		

Inhaled Beta 2 Agonists: Long Acting			
Preferred Drug Covered		**Non-preferred Prior Authorization Required**	
Salmetrol	Serevent®		
Formoterol	Foradil®	Formoterol solution	Perforomist®

Inhaled Beta 2 Agonists: Short Acting			
Preferred Drug Covered		**Non-preferred**	
Albuterol inhalers CFC	Proventil®	Metaproterenol inhalers	Alupent®
	Ventolin®		
Albuterol inhalers HFA	ProAir HFA®	Metaproterenol solution	Alupent®
	Proventil HFA®		
	Ventolin HFA®		
Levalbuterol inhalers	Xopenex HFA®	Levalbuterol solution	Xopenex®
Pirbuterol inhalers	Maxair®		
Albuterol solution 0.5%	Proventil®	Albuterol solution 0.021%	AccuNeb®
	Ventolin®		
Albuterol solution 0.083%	Proventil®	Albuterol solution 0.042%	AccuNeb®
	Ventolin®		

For the complete PDL list:
http://www.khpa.ks.gov/MedicalAssistanceProgram/PharmacyInformation/PreferredDrugList.html

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